

July 31, 1985

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of)	
)	
GEORGIA POWER COMPANY, <u>et al.</u>)	Docket Nos. 50-424
)	50-425
(Vogtle Electric Generating)	
Plant, Units 1 and 2))	

APPLICANTS' MOTION FOR SUMMARY DISPOSITION
OF JOINT INTERVENORS' CONTENTION 10.5
(ASCO SOLENOID VALVES)

Pursuant to 10. C.F.R. § 2.749, the Applicants hereby move the Atomic Safety and Licensing Board ("Board") for summary disposition in Applicants' favor of Joint Intervenors' Contention 10.5. As grounds for this motion, Applicants state that no genuine issue of material fact exists to be heard with respect to Contention 10.5 and that Applicants are entitled to a decision in their favor on that contention as a matter of law.

In support of this motion for summary disposition of contention 10.5, Applicants rely upon:

- (1) Applicants' Statement of Material Facts as to Which No Genuine Issue Exists to Be Heard Regarding Contention 10.5;
- (2) Affidavit of Richard B. Miller, dated July 26, 1985;
- (3) Affidavit of Victor L. Gonzales, dated July 29, 1985; and

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- (4) All the filings in the proceeding, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties.

I. Background.

When initially proposed by the Joint Intervenors, Contention 10 read:

Applicant has not shown that safety-related electrical and mechanical equipment and components will be environmentally qualified at the onset of operations and throughout the life of the plant as required by General Design Criteria 1, 2 and 4 of 10 C.F.R. 50, Appendix A and other applicable NRC rules.

Campaign for a Prosperous Georgia ("CPG") Supplement to Petition for Leave to Intervene and Request for Hearing (April 11, 1984) ("CPG Supplement") at 21; Georgians Against Nuclear Energy ("GANE") Supplement to Petition for Leave to Intervene and Request for Hearing (April 11, 1984) ("GANE Supplement") at 23. In the basis proffered by the Joint Intervenors for this proposed contention, they alleged in part that in tests performed by Franklin Research Center several solenoid valves manufactured by Automatic Switch Company ("ASCO") had failed in tests simulating normal and accident conditions. The Joint Intervenors asserted that the NRC staff had concluded based on the results of those tests that the ASCO solenoid valves that failed should not be used in any application in which they might be exposed to conditions more severe than those to which they had been tested in earlier

qualification tests performed in 1978.^{1/} Joint Intervenor then cited a table in the Applicants Final Safety Analysis Report ("FSAR") listing several ASCO solenoid valves used in safety-related functions at VEGP. CPG Supplement at 24; GANE Supplement at 25.

The Applicants' response to proposed Contention 10 divided the bases supplied by the Joint Intervenor for that contention into eleven subcontentions, each of which they addressed separately. The Applicants labeled the Joint Intervenor's allegations concerning the environmental qualification of the ASCO solenoid valves used at VEGP as subcontention 10.5 and did not object to the admission of those allegations as a contention. Applicants' Response to GANE and CPG Supplements to Petitions for Leave to Intervene (May 7, 1984) at 68.

In its Memorandum and Order on Special Prehearing Conference Held Pursuant to 10 C.F.R. 2.715a, dated September 5, 1984, the Board admitted subcontention 10.5 as a contention in this proceeding. LBP-84-35, 20 N.R.C. 887, 905 (1984). After the entry of that order, the Joint Intervenor and the Applicants engaged in discovery on Contention 10.5. The written discovery exchanged by the parties on that contention consisted of:

^{1/} While the discussion in the Joint Intervenor's pleadings did not make clear who performed the 1978 qualification tests, those tests were performed by Isomedix, Inc. on behalf of ASCO. Affidavit of Richard B. Miller at ¶ 24.

Joint Intervenors' First Set of Interrogatories and Requests to Produce (Oct. 25, 1984) at 11-12.

NRC Staff's Interrogatories to Campaign for a Prosperous Georgia (CPG) and Georgians Against Nuclear Energy (GANE) (Nov. 1, 1984) at 3-4, 6.

Applicants' First Set of Interrogatories and Request for Production of Documents (Nov. 5, 1984) at 13-14.

Applicants' Response to Intervenors' First Set of Interrogatories and Request for Production of Documents (Nov. 29, 1984) at 66-73.

CPG/GANE's Response to Applicants' First Set of Interrogatories and Request for Production of Documents (Dec. 5, 1984) at (unnumbered pages) 19-21.

CPG/GANE's Response to NRC Staff's Interrogatories (Dec. 10, 1984) at 1-3, 5.

Applicants' Third Set of Interrogatories and Request for Production of Documents (Jan. 4, 1985) at 12-13, 26.

Campaign for a Prosperous Georgia/Georgians Against Nuclear Energy Third Set of Interrogatories and Requests to Produce (Jan. 9, 1985) at 15-16.

Letter from T. Johnson to J. Joiner (Feb. 7, 1985) (enclosing supplemental information from Howard Deutsch in response to Applicants' Third Set of Interrogatories) at (unnumbered page) 2.

Applicants' Response to Intervenors' Third Set of Interrogatories and Request for Production of Documents (Feb. 13, 1985) at 67-68.

Applicants' First Supplemental Response to Intervenors' Third Set of Interrogatories and Request for Production of Documents (July 5, 1985) at 15-17.

The Applicants have also deposed Dr. Howard Deutsch, who was listed by the Joint Intervenors as having provided information used by them in responding to the Applicants' written discovery requests concerning Contention 10.5.

CPG/GANE's Response to Applicants' First Set of Interrogatories and Request for Production of Documents (Dec. 5, 1984) at (unnumbered page) 40; Intervenors Campaign for a Prosperous Georgia and Georgians Against Nuclear Energy Response to Applicants' Third Set of Interrogatories and Request for Production (Feb. 5, 1985) at 7.

II. Legal Standards for Summary Disposition.

The admission of a contention for adjudication in a licensing proceeding under the standards enunciated in 10 C.F.R. § 2.714 does not constitute an evaluation of the merits of that contention. Instead, such a ruling reflects merely the determination that the contention satisfies the criteria of specificity, asserted basis, and relevance. The admission of a contention also does not dictate that a hearing be held on the issues raised. Section 2.749(a) of the NRC's Rules of Practice authorizes a licensing board to grant a party to the proceeding summary disposition of an admitted contention without proceeding to a hearing.

That section provides that "[a]ny party to a proceeding may move, with or without supporting affidavits, for a decision by the presiding officer in that party's favor as to all or part of the matters in the proceeding." 10 C.F.R. § 2.749(a). Delineating the standard to be applied by a licensing board in ruling upon such a motion, that section further states:

The presiding officer shall render the decision sought if the filings in the proceedings, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties and the affidavits, if any, show that there is no genuine issue of fact and that the moving party is entitled to a decision as a matter of law.

10 C.F.R. § 2.749(d).

The standards governing summary disposition motions in an NRC licensing proceeding are quite similar to the standards applied by federal district courts to summary judgment motions under Rule 56 of the Federal Rules of Civil Procedure. Alabama Power Company (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 A.E.C. 210, 217 (1974); Tennessee Valley Authority (Hartsville Nuclear Plant, Units 1A, 2A, 1B and 2B), ALAB-554, 10 N.R.C. 15, 20 n.17 (1979). Where, as here, a motion for summary disposition is properly supported pursuant to the NRC's Rules of Practice, a party opposing the motion may not rest upon the mere allegations or denials of its answers. A party cannot avoid summary disposition on the basis of guesses or suspicions, or on the hope that at the hearing the movant's evidence may be discredited or that "something may turn up." Gulf States Utilities Company (River Bend Station, Units 1 and 2), LBP-75-10, 1 N.R.C. 246, 248 (1975). Rather, an opposing party must set forth specific facts showing that a genuine issue of fact remains. 10 C.F.R. § 2.749(b). Where the movant has made a proper showing for summary disposition and has supported his

motion by affidavit, the opposing party must proffer countering evidentiary material or an affidavit explaining why it is impractical to do so. Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-83-32A, 17 N.R.C. 1170, 1174 n.4 (1983), citing Adickes v. Kress & Co., 398 U.S. 144, 160-61 (1970).

The Commission and its adjudicatory boards have encouraged the use of the summary disposition process where the proponent of a contention cannot establish that a genuine issue exists so that evidentiary hearing time is not unnecessarily devoted to such issues. Statement of Policy on Conduct of Licensing Proceedings, CLI-81-8, 13 N.R.C. 452, 457 (1981); see also Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 N.R.C. 542, 550 (1980) ("[T]he Section 2.749 summary disposition procedures provide in reality as well as in theory, an efficacious means of avoiding unnecessary and possibly time-consuming hearings on demonstrably insubstantial issues.")

III. Argument.

At VEGP, four models of ASCO solenoid valves, model numbers NP8316, NP8320, NP8321, and 206-381-6F, are used in safety-related functions. The affidavits of Richard B. Miller and Victor L. Gonzales filed in support of this motion review the environmental qualification tests

conducted on those valves in a joint ASCO and Westinghouse qualification program and in an earlier qualification testing program conducted for ASCO by Isomedix, Inc., describe testing performed by Franklin Research Center on ASCO solenoid valves, and discuss the environmental qualification of those models of ASCO solenoid valves for use at VEGP in light of those tests results.

A. The Use of ASCO Solenoid Valves in Safety-Related Functions at VEGP.

ASCO model NP8316, NP8320, NP8321, and 206-381-6F solenoid valves are utilized in safety-related applications at VEGP as control valves for air operated process valves and dampers. By either venting or supplying air to the air operators on the process valves or dampers, the ASCO solenoid valves cause those process valves or dampers to open or close. Affidavit of Richard B. Miller dated July 26, 1985 ("Miller Affidavit") at ¶3; Affidavit of Victor L. Gonzales dated July 29, 1985 ("Gonzales Affidavit") at ¶3. The manner in which the model NP8316 and 206-381-6F ASCO solenoid valves operate is described in paragraphs 4 through 7 of Mr. Miller's affidavit. Paragraphs 5 and 6 of Mr. Gonzales' affidavit discuss the operation of the model NP8320 and NP8321 valves. Those valve or damper configurations performing safety-related functions at VEGP that include ASCO solenoid valves are

arranged so that the process valves or dampers will attain their required "safe" position, either open or closed, in the event of a loss of supply air. Miller Affidavit at ¶3; Gonzales Affidavit at ¶3.

B. The Environmental Qualification Testing Performed on the ASCO Solenoid Valves Used at VEGP.

In 1980 and 1981, ASCO and Westinghouse jointly conducted an environmental qualification testing program for various ASCO solenoid valves. Included among the solenoid valves tested were valves representative of the model NP8316, NP8320, NP8321, and 206-381-6F solenoid valves used in safety-related functions at VEGP. The objective of the qualification testing program was to demonstrate that the ASCO solenoid valves met or exceeded their safety related performance requirements while subjected to simulated normal and accident environments. Gonzales Affidavit at ¶7; Miller Affidavit at ¶8.

The tests comprising that qualification program consisted of performance tests; thermal, mechanical, and pressure aging; normal environment radiation testing; vibration aging, operating basis earthquake simulation, and resonance testing; safe shutdown earthquake simulation; design basis event environmental radiation testing; and high energy line break ("HELB") environmental testing (test profile determined by a composite of the LOCA and MSLB environmental conditions). Except for the

model NP8321 valve, that joint ASCO/Westinghouse testing program established the environmental qualification of the ASCO solenoid valves tested pursuant to the standards set by the Institute of Electrical and Electronics Engineers ("IEEE") Standard 323-1974 and IEEE Standard 382-1974 and demonstrated their seismic qualification in accordance with IEEE Standard 344-1975. Gonzales Affidavit at ¶¶8-9; Miller Affidavit at ¶¶9-17.

Figure 10.5-3 attached to the affidavits of both Mr. Miller and Mr. Gonzales profiles the extreme environmental conditions to which the model NP8316, NP8320, and 206-381-6F valves tested in the joint ASCO/Westinghouse program were qualified. Those extreme conditions included (a) a peak temperature of 420°F, (b) pressure of 57 psig, and (c) a chemical spray of 2500 ppm boron buffered with sodium hydroxide to a pH of 10.5. Those conditions envelope the most severe conditions that the ASCO solenoid valves might experience during and after a design basis accident at VEGP. Gonzales Affidavit at ¶¶9, 33; Miller Affidavit at ¶¶11, 17, 38.

The test valve representative of the model NP8321 valve in the joint ASCO/Westinghouse qualification program failed to function properly on the twelfth day of the HELB environmental testing. Because of that failure, ASCO does not consider the model NP8321 valve to be qualified for the conditions to which that valve was tested in that qualification program. Instead, it depends upon earlier

qualification testing of that model valve performed by Isomedix, Inc. to establish the environmental conditions for which that valve is qualified. In the qualification program conducted by Isomedix, Inc., the valves tested were subjected to sequential exposures of elevated temperature, radiation, wear aging, seismic simulation, vibration endurance, accident radiation, and a 30-day LOCA simulation. Gonzalez Affidavit at ¶¶10-12.

Figure 10.5-4 profiles the adverse conditions to which the model NP8321 was qualified by the Isomedix tests. Those conditions include (a) a peak temperature of 346°F, to which the test valves were exposed for three hours; (b) a peak pressure of 110 psig; and (c) a chemical spray of 3000 ppm boron buffered with sodium hydroxide to a pH value of 10. Id. at ¶13.

C. The Testing Performed Upon ASCO Solenoid Valves by the Franklin Research Center.

In 1983 the Franklin Research Center reported the results of a testing program that it had undertaken on ASCO solenoid valves in 1981 under a contract between it and the Nuclear Regulatory Commission ("NRC") staff. Among the valves tested by Franklin Research Center were two model NP8316 valves, one model NP8320 valve, one model NP8321 valve, and one model 206-381-6F valve. Gonzales Affidavit at ¶¶14, 20; Miller Affidavit at ¶¶19, 23.

Following functional tests, Franklin Research Center

artificially aged one of the model NP8316 valves and the model NP8320, NP8321, and 206-381-6F valves to simulate a four-year life at 140°F. Those valves were irradiated to a total integrated dose of 50 megarads and then exposed to a temperature of 268°F for approximately fifteen days. While at that elevated temperature the valves were cycled 2000 times. This artificial aging was much more severe than that used in the ASCO/Westinghouse testing program, where the valves were cycled 200 times at elevated temperatures and 1800 times at room temperature. Gonzales Affidavit at ¶14; Miller Affidavit at ¶11.

In functional tests performed subsequent to the artificial aging, the model NP8321 valve experienced what Franklin Research Center characterized as "excessive" seat leakage, and that model valve was removed from the test program. Gonzales Affidavit at ¶15. As explained in paragraph 29 of Mr. Gonzales' affidavit, however, the leakage rate encountered by Franklin Research Center with the model NP8321 valve was significantly less than the leakage rate that might affect the ability of that model valve to function adequately.

The other model NP8316 valve had been naturally aged by ASCO at 140°F for three years, without any radiation exposure. That valve was cycled 2000 times at room temperature. Both model NP8316 valves and the model NP8320 and 206-381-6F valves then underwent pressurization testing, vibration aging, resonance search, seismic

testing, design basis event radiation exposure, and a simulated composite LOCA and MSLB exposure. Gonzales Affidavit at ¶16; Miller Affidavit at ¶19.

In the composite LOCA/MSLB simulation, the valves were exposed to two temperature and pressure transients. While the targeted peak temperature in the test was 420°F, thermocouple data from the test chamber indicated that certain areas in the chamber experienced higher temperatures than the intended test conditions. The temperature of the naturally aged model NP8316 valve (which lags behind the environmental temperature in the test chamber) increased to 410°F, which was significantly above the 350°F to 360°F temperatures reached by the other valves in the test chamber. Miller Affidavit at ¶20.

The ASCO model NP8320 and 206-381-6F valves performed satisfactorily through all of the tests conducted by Franklin Research Center. Gonzales Affidavit at ¶19; Miller Affidavit at ¶21. Although the model NP8320 experienced what Franklin Research Center described as "severe" seat leakage following the LOCA/MSLB simulation, that seat leakage did not prevent the valve from being operated to perform its intended safety function.^{4/} Gonzales Affidavit at ¶19. Neither of the model NP8316

^{4/} The rate of seat leakage encountered by Franklin Research Center with the model NP8320 valve was also well below any leakage rate that might affect the ability of the valve to perform its safety function. Gonzales Affidavit at ¶¶25-26.

valves tested by Franklin Research Center, however, could be cycled properly during the composite LOCA/MSLB test. Miller Affidavit at ¶21.

After reviewing the results obtained by the Franklin Research Center in its testing program, the NRC staff in April 1984 issued IE Information Notice No. 84-23. That IE Information Notice reported the NRC staff's initial assessment of the continued validity of the prior qualification testing performed on the ASCO solenoid valves in light of the Franklin Research Center test results. The NRC staff discounted the failures of the artificially aged valves in the Franklin Research Center tests, concluding that those test results were inconclusive due to the severity of the artificial aging to which those valves were subjected. The failure of the naturally aged model NP8316 valve, however, caused the NRC staff to decide that that model valve might not be suitable for use in the environmental conditions to which it was tested in the joint ASCO/Westinghouse qualification program. Instead, the NRC staff viewed the model 8316 valve as acceptable for use only in applications where the adverse conditions to which it might be exposed were enveloped by the conditions to which that model valve had been tested in earlier qualification testing conducted by Isomedix, Inc. on behalf of ASCO.^{4/} In that qualification testing the

^{4/} In January 1985, the NRC staff reiterated those conclusions concerning the effect of the Franklin Research Center test results in IE Information Notice 85-08.

model NP8316 valve had been exposed to a peak temperature of 346°F for three hours. Miller Affidavit at ¶24; Gonzales Affidavit at ¶21.

D. The ASCO Model NP8316, NP8320, NP8321, and 206-381-6F Solenoid Valves Are Qualified for Use at VEGP.

1. The Model NP8320 and 206-381-6F Valves.

The joint ASCO/Westinghouse testing program established the environmental qualification of the ASCO model NP8320 and 206-381-6F solenoid valves for use at VEGP. As described above, the adverse conditions to which these valves were exposed in the joint ASCO/Westinghouse program envelope the most extreme conditions to which those model valves might be exposed at VEGP. Gonzales Affidavit at ¶¶7-9, 33; Miller Affidavit at ¶¶17, 38. The subsequent Franklin Research Center tests, which also exposed those valves to more severe conditions than they might experience at VEGP, provided additional confirmation of their environmental qualification.

2. The Model NP8316 Valve.

The model NP8316 ASCO solenoid valves used at VEGP have been shown to be qualified for use at VEGP by that same qualification testing program supplemented by a thermal lag analysis performed by Westinghouse. That thermal lag analysis showed that upon exposure to environmental conditions as adverse as those reflected in

the composite LOCA and MSLB profile for VEGP, the temperature reached by the model NP8316 solenoid valves inside containment would not exceed the temperature to which that model valve was qualified by the Isomedix qualification testing program. Gonzales Affidavit at ¶23; Miller Affidavit at ¶¶26-34.

As noted above, in the qualification testing program performed by Isomedix, Inc. on behalf of ASCO, the model NP8316 valve was exposed to a peak temperature of 346°F for three hours. Because of the length of time that the test valves were subjected to that extreme temperature, the temperature reached by the model NP8316 valve itself would have equalled that temperature. Therefore, those tests qualified the model NP8316 valve for any application in which the conditions to which the valve could be exposed would not cause the temperature of the valve to exceed 346°F. Miller Affidavit at ¶¶27-28.

Figure 10.5-5 attached to the affidavits of Mr. Gonzales and Mr. Miller profiles the temperature conditions to which ASCO solenoid valves located inside containment at VEGP must be qualified. A composite of the conditions resulting from a LOCA and MSLB, that profile reflects a peak temperature of 400°F, which peak has a duration of approximately three minutes. Gonzales Affidavit at ¶22; Miller Affidavit at ¶34. Because of

the short duration of the period of time that a model NP8316 valve located inside containment would be exposed to the peak temperature, the temperature to which the valve itself would increase would be less than that peak environmental temperature. The thermal lag analysis performed by Westinghouse for the model NP8316 valve, which analysis accounts for the amount of time it would take for the valve temperature to equalize with the surrounding environment, shows that when exposed to environmental extremes enveloping the worst conditions that the model NP8316 valve might experience at VEGP, the valve temperature would not increase above 346°F.⁴ Gonzales Affidavit at ¶23; Miller Affidavit at ¶¶28-33. Therefore, the model NP8316 solenoid valve is environmentally qualified for use at VEGP.

3. The Model NP8321 Valve.

None of the model NP8321 valves used at VEGP are located inside containment. Therefore, the adverse environmental conditions for which that model valve must be qualified are less severe than the conditions to which

⁴ The peak temperature for the VEGP-specific LOCA/MSLB profile, 400°F, is the same as the peak temperature in the LOCA/MSLB profile for which Westinghouse's thermal lag analysis showed the model NP8316 valve to be qualified by the Isomedix testing. The VEGP-specific profile, however, includes a margin of more than 20°F. Gonzales Affidavit at ¶22.

the other model ASCO solenoid valves used at VEGP must be qualified. Those conditions, which are profiled in Figure 10.5-8 attached to Mr. Gonzales' affidavit, are enveloped by the conditions to which the model NP8321 was tested in the qualification testing program conducted by Isomedix, Inc. Gonzales Affidavit at ¶28. While the model NP8321 valve tested in the joint ASCO/Westinghouse testing program failed during the HELB environmental testing, that test program further demonstrated the qualification of that model valve for use at VEGP. That failure did not occur until the twelfth day of the test, which period simulates in excess of a year of operation following an accident, and the model NP8321 valves at VEGP would be required to operate for only a few hours after a design basis event. Id. at ¶10, 27. Moreover, the seat leakage experienced by Franklin Research Center with the model NP8321 valve does not cast any doubt upon its environmental qualification since the leakage rate identified by Franklin was significantly less than any leakage rate that might affect the valve's ability to perform its safety related function. ^{2/} Id. at ¶29.

^{2/}The maximum leakage rate reported by Franklin Research Center for the model NP8321 valve was 60 liters per minute. ASCO has determined that seat leakage in the model NP8321 valve would have to reach 380 liters per minute to cause the cylinder port pressure to deviate by more than 10% of the applied pressure at the inlet port, which is the threshold it utilizes for acceptable valve performance. Gonzales Affidavit at ¶ 29.

IV. Conclusion.

As the Applicants have demonstrated above, no genuine issue of material fact exists to be heard with respect to Contention 10.5. The Applicants have shown that the ASCO solenoid valves used in safety-related functions at VEGP have been environmentally qualified for use under the adverse conditions to which they might be exposed at VEGP. Therefore, the Applicants respectfully request that the Board grant their motion for summary disposition of Contention 10.5.

Respectfully submitted,

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Dated: July 31, 1985

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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In the Matter of)
GEORGIA POWER COMPANY, et al.)
(Vogtle Electric Generating)
Plant, Units 1 and 2)

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH
Docket Nos. 50-424
50-425

CERTIFICATE OF SERVICE

I hereby certify that copies of Applicants' Motion for Summary Disposition of Joint Intervenors' Contention 10.5 (ASCO Solenoid Valves), dated July 31, 1985, were served upon those persons on the attached Service List by deposit in the United States mail, postage prepaid, or where indicated by an asterisk (*) by hand delivery, this 31st day of July, 1985.

James E. Joiner
James E. Joiner
Attorney for Applicants

Dated: July 31, 1985

